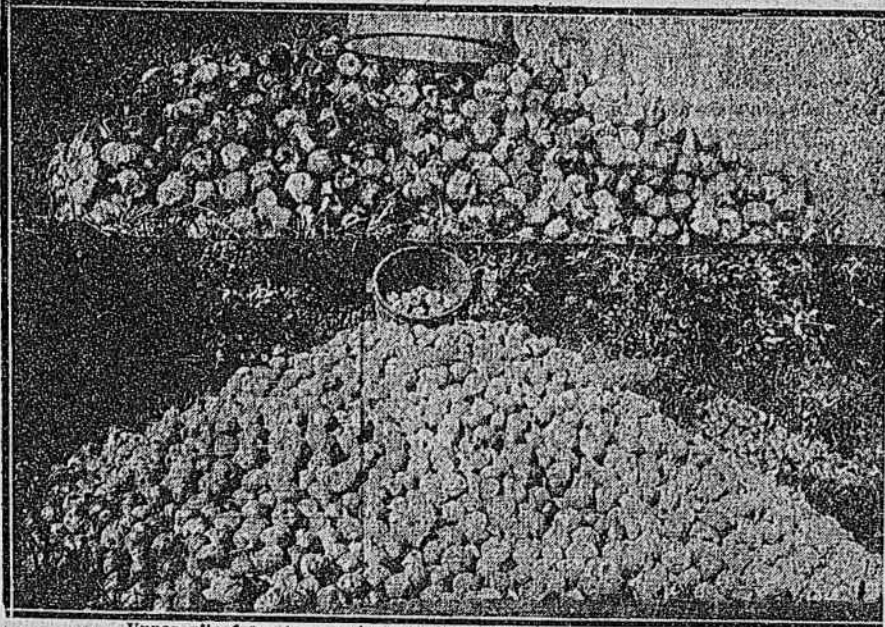
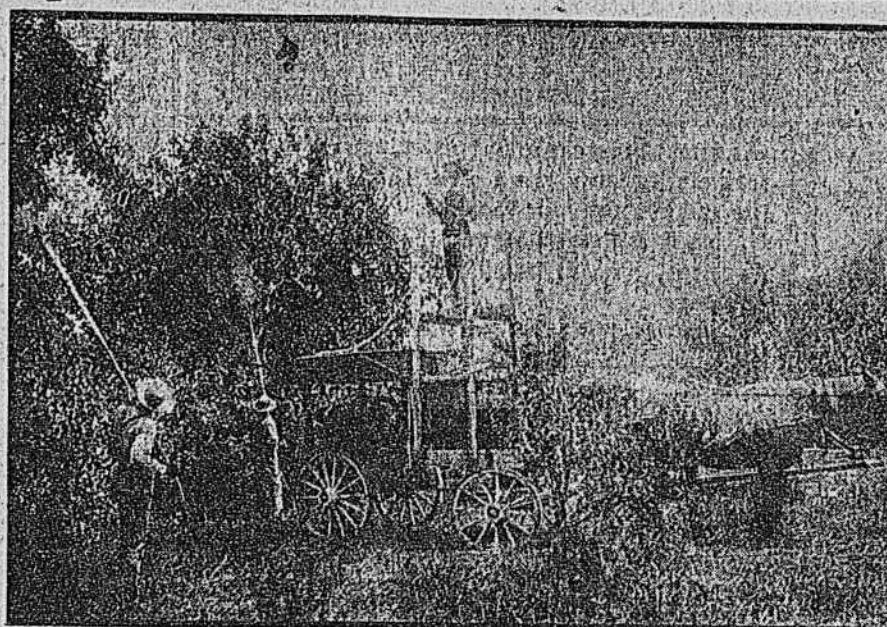


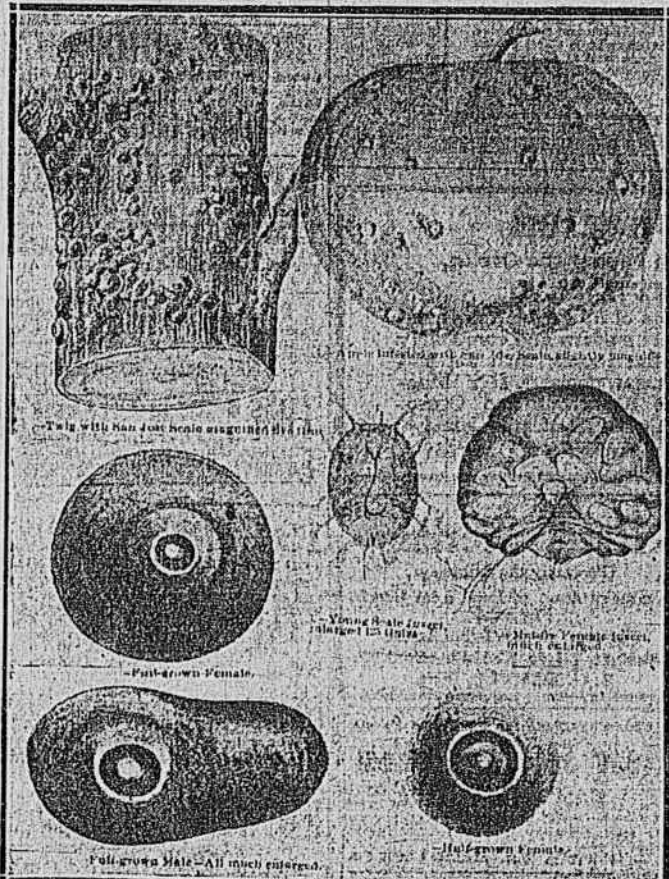
Uncle Sam and the Orchardist--How Government Fights Bugs and Bacteria Which Prey Upon Fruits--Stories of Fortunes



Upper pile from trees not sprayed, mostly bad. Lower pile from sprayed trees. All apples good except those in basket.



Gasoline engine spray machine at work in orchard.



BY FRANK G. CARPENTER. Washington, D. C. "The larger fleas have smaller fleas upon their backs to bite 'em; And these small fleas have other fleas, And so ad infinitum."

Come with me to the Agricultural Department and see how Uncle Sam is waging war on the fleas, bugs and bacteria which are injuring the farmer. He is finding them by the millions and he has scores of scientists who are rearing them, studying their habits and practicing how to destroy them. I went to-day through a number of laboratories where these little beings are cultivated. Some are so small that a billion or so can be crowded into a thimble, and they breed so rapidly that a single family will produce more than 1,600,000 children and grandchildren in a season, many generations being crowded into that time.

Take, for instance, the San Jose scale, which has cost our fruit growers something like \$500,000,000 and for which they are now spending millions to fight. I looked at it through the microscope in the pomological bureau to-day. The one I examined was among those on a peach limb which covered it as closely almost as the pores of your skin. Each scale is a waxlike body

not as big as the head of a pin, and the insect itself lies under this, using it as a shield while it sucks the life-blood of the tree.

The little being is male and female and the sexes are married and have children not unlike human beings. The single female, however, will have 400 young in a season, and the young reach maturity so quickly that one little wife may produce 400 babies a year, while the offspring of one parent during a single season has been estimated at more than 1,600,000,000 females. When it is remembered that there are colonies of this insect scattered throughout every orchard region of the United States from Northern Michigan to the Everglades of Florida, and from Los Angeles to Delaware, you may appreciate what a job it is to control them.

A Chinese Invasion. Talk about the Yellow Peril! This little animal came from across the Pacific. It was brought out in some peach stock imported from China, and was ruining the orchards of Southern California when one of the farmers of that region gave his trees a wash of sheep dip. The dip was composed of lime, salt and sulphur solution, which had come from Australia. He was surprised to find that this liquid wiped out

the scale. The fact was reported to the Agricultural Department, and then, as a result of its experiments, began the wholesale spraying which now goes on all over the country. Every winter or spring the commercial orchards of the United States are sprayed with this mixture. The concentrated spray is too strong to use after the leaves have come out, but it does not injure the trees while vegetation is dormant, and if applied to every bit of the bark above ground it wipes out the scale.

Moreover, the San Jose scale has no wings to fly from tree to tree, although the young can climb about from their little homes over the branches, and can be carried on the feet of birds to other trees of the orchard, or to other orchards, which may be many miles off. It may also be blown by the wind a short distance.

The insect has so spread that there is scarcely a locality in the United States which is free from it, and the only salvation of an orchard is regular spraying from year to year. The scientist tell me the spraying should begin as soon as the trees are planted, for scale may exist on the nursery stock, and a single family which may start with a space as big as the finger nail of a baby will soon populate not only your orchard, but also those of your neighbors. The insects live on the trees of the forests, so that the only safe method is a wholesale slaughter each year.

Other Parasites. I spent some time with Professor Waite, who is now studying the prevention of the rot which develops in oranges, apples, peaches and other fruits on their way to the markets. He took me into his laboratories, where a number of microscopists and other scientists were working, and where there were long tables filled with glass jars. These were so covered as to prevent the invasion of bacteria, and they contained oranges which had been inoculated with fungus and given the right conditions for its development. I saw a large number of glass tubes, the mouths of which were plugged with cotton. Each tube contained a species of fungus, which by the way, is one of the lower forms of vegetable life.

Fungus is a sort of plant which feeds or parasitizes, as it were. It is so small that you have to have a microscope to examine it, but it develops so rapidly that it soon eats up and destroys any fruit to which it attaches itself. I was shown a glass cage, something like a telephone booth, which was made by Mr. Waite that it might be bacteria proof. This is in order that the men may work safely within it, and that the fungus they are studying may not be affected by the other little pests lying around. The booth has a draft which forces the air in through a filter of cotton wool, so wadded together that the bacteria cannot go through them. It is this air that is breathed by the operator at work in the booth.

In other places, they were working on forms of fungus which affect the leaves and in others upon those which eat at the bark and heart of the tree. It was, in fact, a great medical laboratory devoted to the diseases and their prevention.

I found some similar things in the laboratories of Professor Quaintance, who is fighting all sorts of insects and worms which attack our orchards, and also in the rooms of Professor Scott, who is one of the most famous of our scientific doctors, as to the treatment of fungus diseases.

Insects Which Eat Millions. It is impossible to estimate the damage done to our orchards by bugs and rot. There are from fifteen to twenty insect pests which cost this country from \$60,000,000 to \$75,000,000 a year. The control of the San Jose scale costs up to many millions and then there are also the codling moth, the plum curculio, plant lice and the apple

and peach borers, which fatten on the roots of the trees. Take the peach. We have east of the Rockies some 14,000,000 such trees, and they are yielding a crop worth \$15,000,000 a year. In some seasons the brown rot takes away fully half of the profits of the South, and the plum curculio often eats down our peach income to the amount of \$3,000,000 or \$4,000,000. By the recent discoveries of Professors Scott and Quaintance we are able to control certain peach pests, and this means an annual saving of millions. The material used is self-boiled lime and sulphur wash mixed with arsenate of lead. It is applied several times during the season.

Our Big Peach Crop. Now that the people are going crazy over the money in apples, they seem to have forgotten the profits which have been and are being made in peaches. I am told that the peach is one of the biggest gambles in the great lottery of fruit raising. It often fails, but a single good crop covers many past losses, and two or three make the orchardist rich.

Take the Miller brothers, of West Virginia. They have an orchard which has yielded dividends of \$500 per acre, and out of which they have been making from 40 to 60 per cent. per annum. We have altogether more than 100,000 peach trees. There are 8,000,000 in Michigan and almost an equal number in Georgia, Texas and California. Kansas is a great peach State, and so are Maryland and Delaware. Along the eastern shores of Lake Michigan there is a peach country which runs from a few miles back from the lake, extending north and south for a distance of 150 miles. Georgia has a number of orchardists who are cultivating from 100,000 trees, and there is druggist in that State who owns 160,000 trees. The peach trees of the South have been recently greatly injured by rot and other diseases, but the new spray solutions of the department have proved the salvation of the crop, and there promises to be big money in it.

How One Boy Made Good. In connection with peach growing, it is interesting to tell how one boy made a name for himself, and by his own exertions and study lifted not only his own family but many others out of poverty. I refer to Hale, the peach king of Georgia, the man who is now at the head of a syndicate which owns orchards capitalized at \$1,000,000 or more, and which has shown profits of \$50,000 and upward a year. I don't know how many hundred thousand peach trees Mr. Hale owns, but he has built up a great peach-growing industry in Southwestern Georgia, and his fruit is sent in refrigerated cars all over the North. He sometimes harvests 1,000,000 peaches a day, each peach being handled three times in sorting, picking and packing, and he has perfected the most improved methods of cultivating his trees and marketing the crop.

I have just talked with a man who knows Hale very well. Said he: Hale was born near a little town in Georgia. His father lifted on a farm upon which nothing could be raised, not even the mortgage. His father was in debt, and he died leaving the farm encumbered to the amount of \$2,000 with only two little boys, Hale and his brother, to meet the interest and support the family. They found they had to hire themselves out to keep the farm going, and at twelve years of age young Hale was cutting corn for his neighbors at a few cents a day.

"It was one day during the noon recess, when he was tired of handling cornstalks, that he sat down under a seedling peach tree and munched the fruit, while he wondered whether he should ever be able to pay off the debt and make a man of himself. As he did so he looked up at the peaches, and thought how fine it would be to make a few thousand such trees and make a fortune in fruit. The thought

grew upon him, and he decided to try. In one way and another he scraped and saved until he had \$100 in cash. He earned more during the winter, and in the spring was able to buy 3,000 peach trees and plant them out on the home farm. They grew, and through his excellent care, soon surpassed all the trees of the neighborhood. He raised crops between the rows, and finally brought the orchard into bearing.

"Before the fruit was ripe, however, the mortgage came due, and the elders of the church which held it, notified him he must come and pay. He put them off for a few weeks and rushed his fruit to the markets, handling it so that he got the highest prices. He advertised in the Hartford papers, and hired storekeepers there for the display of his peaches. His profits were such that he soon had more than enough money in the bank to pay off the mortgage and leave him a big sum for the future.

A \$100,000 Crop. Hale's first peach harvest, in short, netted him about \$10,000. This was not known to the churchmen until he came in and said:

"Well, gentlemen, I have come to arrange about that note."

"But, young man, we don't know that we can extend it," said one of the deacons. "You boys have been very extravagant in selling your peaches, and we can't afford to lose this money."

"But," said young Hale, "I have come to pay the note."

"Oh!" returned the elders, "if you have the money to pay we will be just as lief let it run. We will have to put the money elsewhere. You had better keep it. All we want is our interest."

"No, indeed," replied Hale. "I have the money, and I am going to get rid of that mortgage." And he thereupon paid the note.

"The next year," continued this man, "Hale set out more peaches. He cultivated and fertilized his orchard, and he proved that fruit could be made profitable in Connecticut. In 1889, he made \$25,000 out of one crop from

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thirty-five acres, and he gave such a stimulus to peach growing in New England that there are now something like 3,000,000 trees in Connecticut, while there are as many in the adjoining States of Massachusetts and Rhode Island.

A little later on Mr. Hale got the idea that Georgia would raise peaches. He traveled all over that State and picked out his present locality. Since then he has raised enormous crops, and has shown what could be done by careful cultivation, intelligent marketing, modern machinery and good business management. He is always on the lookout for frosts and pests of one kind or another, and his foresight has several times saved him his crop, when those of his neighbors were ruined.

A Word of Warning.

As I write this, one of the many stories of the successes which are now being made in farming, the thought comes to me of the multitude who are rushing into such enterprises and investments without consideration. As Professor Waite said to me to-day, the machinery of fruit growing and farming is more wonderful that that of the largest gun factory or electrical industry. Its success requires the most careful selection of soil, a knowledge of the crops and an attempt to raise, a study of fertilizers and diseases, and also the best possible machinery and the most thorough care. It is not a matter of chance, but of skill and planning throughout all or a greater part of the year. Notwithstanding this, men who would not buy a lot without the most careful searching of title and go thoroughly investigating the markets, the machinery and the past profits and losses, will risk the savings of a lifetime in a gold mine of which they personally know nothing, or in an orchard which is presented only on paper.

Take, for instance, the case of a government employee who called the other day to ask the advice of the fruit men--as to an investment in a new orange region which is being explored in various parts of the South. This orange is of a Japanese variety which will grow much further north than the sweet oranges of Florida or California. The locality proposed was somewhere in Alabama, and was managed by a syndicate which was selling its lands at \$300 per acre, with the understanding that the trees are to be planted at once and are to be cared for for five years, at which time they will come into bearing.

His figures which show that a tract of five acres so treated will give a man a profitable income. Said the promulgator who told me this story:

"That man was a professional printer. His work is such that the misplacing of a comma might cost Uncle Sam millions, and a mistake would lose him his job. He told me, had so worn upon his nerves that he felt he must arrange for his leaving the service at some time in the near future. He said he thought this would be a good place to invest his savings, and that he would eventually retire to his orchard. He said he intended to put in all he had and to pay the balance on installments of \$15 a month. I asked him if he had gone down to Alabama to see the land and investigate the proposition. He replied that he had not, but that the prospectus gave all the figures and showed just what the profits would be. I asked if he knew the managers. He said he did not. I thereupon strongly advised him to

make no such investment without further knowledge. He said, however, that he thought he would risk it, and so went away. His mind was made up before he came in, and my advice was worth nothing.

The Agricultural Department has many such schemes brought daily before it. Some of them are good and will pan out all right. But a great number are questionable, to say the least, and those who invest should make the most careful inquiries into locations, markets and the individuals who are managing before they risk that which has cost them years of privation to save.

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Williamsburg Social News

[Special to The Times-Dispatch.] Williamsburg, Va., June 17.--Dr. L. G. Tyler, president of Williams and Mary College, and Mrs. Tyler have gone to the country to spend the summer. As Dr. and Mrs. Walter A. Montgomery left to-day for the University of Virginia, where they will remain till August.

Prof. J. Ritchie and Mrs. Ritchie have gone to Wellsville, O., where they will spend the summer. Prof. Ritchie will take a trip to California, where he goes in the interest of one of his books, which will be adopted in the public schools of that State. After spending a month in study at Lehigh University, John Tyler will go to Columbia University for special work this summer. George O. Ferguson will also spend the summer at Columbia.

Dr. and Mrs. W. H. Keeble have gone to Tennessee to spend the summer with relatives.

Mr. Ashby Bloxton, after a short visit to friends on the Eastern Shore, will go to California for the summer.

Mrs. Sue Hundley has returned from Curry county, where she was the guest of Mrs. J. S. Bohannon.

Mrs. Mary Ware Galt has returned from Stuart Hall, Staunton, where she spent the past week.

Mrs. E. T. Lamb and daughter, Miss Lucy, spent last Sunday with the former's parents, Captain and Mrs. L. W. Lane.

Miss Emily Christian has returned from Hampton, where she visited her brother, H. M. Christian.

C. C. Chapman, of Madison, Wis., is here on a visit to relatives.

E. W. Hopewell has returned home from a visit to relatives near Staunton.

Mrs. T. B. Johnson, of Glenmore, Norfolk county, has been spending the week with her parents, Mr. and Mrs. J. W. Jones.

Miss Lou Gaddy, of Tazewell, was the guest this week of her cousin, Miss Katherine Gaddy.

Mrs. H. N. Phillips and son, Harry, have returned home from a visit to relatives in Ghana City.

Miss Emily Moncre is in Lexington, where she went to attend the V. M. I. She is the guest of her cousin, Miss Maud Houston, who is in Lexington.

Mrs. John Clark and daughter, Miss Mabel, have returned from a visit to relatives at Catbrook.

Judge and Mrs. D. G. Tyler have moved back to their home, "Sherwood Forest," in Charles City, for the summer months. They will return to Williamsburg in the fall and reside in their home on Palace Green.

Daughter Spencer has been in Washington, D. C., this week visiting his brother, Dr. Blair Spencer.

Prof. Elmore Dickinson, formerly of Williamsburg, now a professor in the University of West Virginia, has returned home, and Dickinson and a party, sailed for Europe this week to remain till fall.

Miss Louise Dickinson, of Teano, is here to spend some time with relatives.

Mrs. R. M. Brooks spent Thursday with relatives near Staunton.

Prof. and Mrs. H. H. Young and little daughter, after a visit of several weeks here, will leave next week for their home in Virginia.

Visit Prof. Young's parents, Owing health Prof. Young was unable to visit Stone Gap, where the new was to be of the Summer Normal.

The Caterer Telephones, Do You?



"T-O-MORROW night? Very well, we will have everything ready." The confectioner and caterer often have to fill orders at short notice.

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A healthy old couple who have lived a long life together make an ideal picture. But unfortunately so many old people have a dismal life. Even if they are otherwise in good health they seem to suffer from constipation and indigestion. It is the penalty of old age. To old people the best advice is--Be careful of your food. But even that is not all. The stomach and bowel muscles are no longer as active as they used to be, and on that account movement of the bowels is more difficult. To aid nature take a mild laxative like Dr. Caldwell's Syrup Pepsin whenever you find yourself becoming constipated or when you have any difficulty digesting your food. It is not strong like salts or purgatives, but is mild, gentle and non-gripping--just what elderly people need. It is the best laxative for old people, as it is for women and children. Many men and women far beyond seventy have been able to discard all medicines after a brief use of Syrup Pepsin. The regular bottles can be obtained of any druggist at fifty cents or one dollar, but we suggest that you make a free trial of it first, as so many others have done. Send your address to "Dr. Caldwell" and he will send you a free sample bottle.



Dr. Caldwell does not feel that the purchase of his remedy ends his obligation. He has specialized in stomach, liver and bowel diseases for over forty years, and will be pleased to give the reader any advice on the subject free of charge. All are welcome to consult him. Whether for the medical advice or the free sample address him Dr. W. B. Caldwell, 241 Caldwell Building, Monticello, Ill.



The following are some extracts from letters Dr. Caldwell has received:

"Your free sample bottle came in due time, and I was so gratified with results that I bought a larger bottle, and am so in favor of its effects that I am putting it on the table for my wife and myself. I have had the right remedy and will no longer have the trouble. Also it acts without inconvenience."--Mrs. W. H. Carter, Maywood, Ill.

"I am 73 years old; have been seriously afflicted with heart trouble for 45 years; unable to do anything during that time have spent all I had doctoring with several local doctors and many specialists, all to no purpose. My case is a very hard one and incurable; constipation of a very serious nature, would, for years, go from three to five days without a movement; would take pills, salts, etc., until I was entirely tired of life. Have tried everything. I saw your ad. sent me a sample of Syrup Pepsin, received it, and it did me so much good that I got a 50c bottle, and have taken it as per directions regularly; shall get another bottle to-day. It has done me a world of good. It is the nicest and the most effective of any remedy I have ever used. It is simply a god-send to me."--Lewis R. 2, Box 51, Bentonville, Ark.

"I received your free sample of Syrup Pepsin and have taken it, and am now taking a \$1.00 bottle. It is doing me a great deal of good. I have had trouble more or less with my stomach ever since I left the army, but have never taken very much medicine for it; but the sample you sent me did me so much good, I thought I would give it a trial. It is helping me, and I shall continue to take it. I can recommend it to any one having stomach trouble and heart trouble."--Geo. S. Spaulding, Nat. Soldiers' Home, Kansas.

"I have tried your Syrup Pepsin, and found it all that you claim. I am recommending it to the old veterans, and they are buying it on my word. I shall let it last as long as I live. I cannot praise it enough."--Ezekiel Gilpin, National Soldiers' Home, Danville, Ill.